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Creep Feeding of Beef Calves

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Creep feeding is the practice of providing supplemental feed to nursing calves before weaning. Generally, creep feeding is not an economical substitute for rapid genetic growth potential in calves and good-milking cows, nor does it substitute for improved pastures in producing well-grown calves. But, in some situations creep feeding may be desirable and economically advantageous.

This publication discusses when to consider creep feeding, problems associated with it, cost considerations, suggested creep rations, and facility requirements. A list of Cooperative Extension Service publications and computer programs on related aspects of cow-calf management also is provided.

Deciding If and When to Creep Feed

Creep feeding should be most profitable when:
- dams are first-calf heifers,
- calves are born in the fall,
- cows and calves are kept in confinement,
- forage quantity and quality are limited,
- feeder calf prices are high relative to feed prices,
- heavy-weight feeders sell for as much as, or more than light-weight cattle per pound (This occasionally occurs when feeder prices are low and grain prices are high.), or
- a market premium is paid for calves that have extra weight and bloom, and are sold for breeding stock or club calves.

Creep feeding is not advantageous when:
- forage quantity and quality are abundant,
- dams are good milkers,
- weaned calves are to be fed a high-roughage growing ration,
- feed prices are high relative to feeder calf prices,
- heifers are to be kept for herd replacements, or
- milk yield of cows and genetic growth potential of their calves are being evaluated.

The dam’s milk production generally is adequate until the calf is 2-3 months old, so creep feeding is not recommended for young calves. Milk production declines 60-90 days after calving, but the calf’s energy and protein needs increase. This makes creep feeding desirable under certain conditions, usually from the time calves are 3-4 months of age until weaning.

Creep feeding may ease stress on dams, particularly for young cows in late summer. Research has shown that cows nursing creep-fed calves were 20-30 pounds heavier at weaning than cows nursing noncreep-fed calves. Thus, if cows nursing creep-fed calves are heavier at weaning, an economic advantage must be given for heavier sale weight of cull cows and possibly a reduction in nutritional needs of nonsale cows after weaning. It has been demonstrated that providing creep feed early may improve conception rate of dams when forage quality is low, such as with nitrogen-fertilized, tall fescue pastures.

A less obvious advantage of creep feeding is that calves that have been started on creep rations at least 3-4 weeks before weaning usually adapt to bunk feeding more quickly after they are weaned or shipped. Getting calves started on feed before weaning is an important part of most preconditioning programs. Calves that are accustomed to eating from a trough or bunk usually recover weight losses from weaning or shipping more quickly. They also may have fewer respiratory problems than calves not started on feed prior to weaning.

Importance of Restricting Creep Feed Gain

Because bull calves or implanted steer calves have more growth potential than heifer calves, they will more likely have a greater response to creep feeding. Therefore, if practical, creep feed only male calves. If creep fed, steer or bull calves should be placed on full feed soon after weaning, otherwise the additional weight gain and added expense from creep feeding will be lost.

Lifetime productivity of a heifer calf may be reduced if creep feeding causes her to become fat. Typically, much of this fat is permanently deposited in the heifer’s udder and inhibits formation of milk-secreting tissue. For this reason, calves from dams that were once creep-fed themselves often weigh less at weaning than calves nursing noncreep-fed dams.
Most of the research pertaining to effects of creep feeding heifer calves on their lifetime productivity has been done with small- or medium-framed heifers, of predominantly British breeds. Effects of unlimited feeding of high-energy creep feeds on large-framed heifer calves of primarily Continental breeding are not well known. It is safe to assume that most large-framed heifers whose mature weights will be over 1,250 pounds may gain 2.50 pounds per day before weaning without becoming overfat. However, small-framed heifers whose projected mature weight is near 1,000 pounds may become too fleshy if they gain over 2.00 pounds per day before weaning. Whatever the frame size of the heifer calf, the statement holds true, "creep feeding will adversely affect the lifetime productivity of a heifer calf if it causes her to become overfat."

Unrestricted creep feeding also will cause overfattening of small-framed steers and nonreplacement heifer calves that lack genetic potential for rapid growth. Such calves generally:

- bring less per pound as feeder cattle,
- gain weight more slowly than noncreep-fed calves in the first 2-3 months in the feedlot, and
- finish at lighter market weights than desired.

This is why cattle feeders usually prefer calves that have not been creep fed unless feeder cattle prices are low relative to the price of feed.

Limited creep generally is recommended. Creep feeding 2-3 pounds per head daily should supply enough supplemental energy so that the dam’s milk and forage will adequately meet the requirements for normal growth of young calves. Feeding more than 3 pounds per head daily can result in excessive fat deposition instead of skeletal and muscle growth.

Calves may eat 6-8 pounds of creep feed daily as they approach weaning at 7 months. The amount of feed that young calves consume depends upon their age, milk production of their dams, available forage, palatability of the feed and location of the creep feeder. Guidelines for estimated creep feed consumption by calves that are fed free-choice are given in Table 1.

### Cost of Creep Feed Gain

Creep feeding can add 25-50 pounds to a calf’s weaning weight, but producers must decide whether this increased weight is profitable. Each of those extra pounds of gain may have required 8-14 pounds of feed if the calf was self fed. Thus, the decision to creep feed should depend largely on whether the added weight at weaning will more than pay for the added costs.

Table 2 shows what creep feeding gains will cost at various feed prices and feed conversion rates. For example, if it took 10 pounds of feed priced at $5.00 per 100 pounds to produce an extra pound of gain, each additional pound of weaning weight cost $0.50, not including added equipment or labor. A rule of thumb is: "Cost of the creep feed per pound x 10 must be less than the price of calves per pound” if creep feeding is to be profitable.

It is possible to improve creep feed utilization and reduce feed costs by hand feeding about 2 pounds of feed per calf per day. But, the disadvantages of this practice are (1) the high labor cost of feeding the calves each day and (2) the larger calves tend to overeat and smaller calves do not get enough to eat unless adequate bunk space is provided.

### Table 1. Estimated Creep-Feed Consumption by Calves Fed Free-Choice.

<table>
<thead>
<tr>
<th>Age of calf (months)</th>
<th>Feed Consumption per month</th>
<th>cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>2 to 3</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>3 to 4</td>
<td>75</td>
<td>135</td>
</tr>
<tr>
<td>4 to 5</td>
<td>105</td>
<td>240</td>
</tr>
<tr>
<td>5 to 6</td>
<td>150</td>
<td>390</td>
</tr>
<tr>
<td>6 to 7</td>
<td>195</td>
<td>585</td>
</tr>
<tr>
<td>7 to 8</td>
<td>255</td>
<td>840</td>
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### Table 2. Cost per Pound of Extra Gain Achieved by Creep Feeding.

<table>
<thead>
<tr>
<th>Feed needed per lb. of extra gain</th>
<th>Creep feed cost per cwt.1</th>
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<tbody>
<tr>
<td></td>
<td>$4.00</td>
</tr>
<tr>
<td>8 lb.</td>
<td>$ .32</td>
</tr>
<tr>
<td>10 lb.</td>
<td>.40</td>
</tr>
<tr>
<td>12 lb.</td>
<td>.48</td>
</tr>
<tr>
<td>14 lb.</td>
<td>.56</td>
</tr>
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</table>

1Corn price of $2.50/bu. = $4.46/cwt.; $3.00/bu. = $5.36/cwt.; $3.50/bu. = $6.25/cwt. Cost of feeds other than corn in the creep mixture also must be included to arrive at total creep feed cost.
Formulating the Creep Ration

Creep rations may be simple or complex. The first consideration should be cost, followed by palatability, and quality. Home-grown grains should be used in the creep ration whenever possible because costs and quality can be controlled or adjusted to meet individual needs.

Because energy is the first limiting nutrient for nursing calves, grain alone generally is adequate for a creep ration. Protein, vitamins, and minerals generally are provided in sufficient quantities by milk and forage for normal growth and development. Supplemental protein may be necessary, if the dam is not giving enough milk late in lactation or if pastures are dry and short. It is essential that the protein come from a vegetable source such as soybean meal or alfalfa meal and not from urea or nonprotein nitrogen.

Shelled corn and oats are good creep feeds because they are very palatable. Oats are recommended for starting calves on feed; then corn can be added in various combinations with the oats as calves reach 4-5 months of age (Table 3). Rations containing at least 50 percent oats, or 20-30 percent ground hay or alfalfa meal, are best for replacement heifers. Rations containing mostly corn are best for large-framed, growthy steer or bull calves to be placed in drylot immediately after weaning.

If milk production is low, alter the creep ration so it contains 12-14 percent protein to meet the calves' protein needs. Do this by replacing 10 pounds of the 100-pound grain mixture with 10 pounds of 32-40 percent protein supplement, or with 20-25 pounds of dehydrated alfalfa pellets or ground alfalfa hay.

Grains can be fed whole, but coarse rolling, cracking or grinding will improve utilization, palatability, and reduce sorting of the feed by calves. The addition of 5 percent dried or cane molasses will improve palatability and help calves start eating. Once calves are eating the creep ration, the molasses can be omitted. Ground wheat also may be used if it is limited to 40 percent or less of the mix. Fall-born calves, or calves kept in confinement should have high-quality hay in addition to the grain creep.

Pasture Creep

Some producers may want to consider a pasture creep for spring-born calves. This requires a small acreage adjacent to the primary pasture, that is fenced to prevent access by cows. The creep area is managed so forage quality and palatability are maintained at a level well above the primary pasture. This includes the seeding of legumes and grasses and keeping the area clipped to assure lush, high-quality forage.

Calves enter the creep area through gates that are strategically located to provide easy access to and from the creep pasture. The creep pasture and gates must be located near the area where cows and calves congregate (shade, water supply, or mineral feeder) to obtain adequate use by the calves.

<table>
<thead>
<tr>
<th>Table 3. Suggested Creep Rations for Calves.</th>
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<tbody>
<tr>
<td>Ingredients</td>
</tr>
<tr>
<td>Cracked or ground corn</td>
</tr>
<tr>
<td>Ground ear corn</td>
</tr>
<tr>
<td>Ground or rolled oats</td>
</tr>
<tr>
<td>Dehy. alfalfa meal or ground hay</td>
</tr>
<tr>
<td>Dry or cane molasses</td>
</tr>
<tr>
<td>34% protein supplement</td>
</tr>
<tr>
<td>Limestone</td>
</tr>
<tr>
<td>Dicalcium phosphate</td>
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<tr>
<td>Trace mineralized salt</td>
</tr>
<tr>
<td>Nutrient Composition (percent of dry matter)</td>
</tr>
<tr>
<td>Crude protein</td>
</tr>
<tr>
<td>TDN</td>
</tr>
<tr>
<td>Calcium</td>
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<tr>
<td>Phosphorus</td>
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Creep Feeding Facilities and Maintenance

Plans for constructing creep feeders are available from county Cooperative Extension Service offices, or commercially-built creep feeders can be purchased. The creep facility must be well designed and built to prevent accidental access by cows and herd bulls. These animals can founder easily if they eat too much creep feed.

The creep feeder should be portable and provide about one foot of feeder space for every three calves when they are fed free-choice (Figure 1). Eight feet of feeder space will accommodate about 25 calves. The feeder needs a roof to protect the feed from the rain (or snow in winter), and it should be large enough to hold about a week's supply of feed unless calves are being limit fed. When calves are limited to 2-3 pounds of feed per day, 14-18 inches of bunk space should be provided for each calf.

Place the creep feeder near shade, mineral feeders, or water supply, where cows and calves congregate. Calves will not travel far from their mother for creep feed. The openings into the creep area should be about three feet high and 16-18 inches wide. This is large enough to allow the calves to get to the feed, but small enough to keep out even the small, thin cows.

Wet or moldy feed should be removed from the creep feeder to prevent digestive upsets or feed refusal. Do not allow the creep feeder to become empty if calves are being self fed. If this happens, overeating disorders such as rumen overload or enterotoxemia may result and founder is possible. A good precautionary measure against enterotoxemia (overeating disease) is to vaccinate calves with a 7-way vaccine for the prevention of clostridia, blackleg, and malignant edema. Rumen overload (acidsis) is possible when animals (calves or cows) eat large quantities of high-energy feeds in a short period of time. This potential problem must be prevented through superior management rather than with a vaccine.

Summary

It is impossible to make one recommendation for creep feeding which fits every management system. Purebred breeders who get a premium for "bloomy" calves have different objectives than commercial producers who winter calves on high-roughage growing diets.

Evaluate the economics of creep feeding often, and keep in mind the harmful effects of overfattening replacement heifer calves on unlimited, high-energy creep feeds.

Related Publications and Computer Programs

Single copies of the following publications are available free to Indiana residents from their local county Extension office or by writing to the Publications Mailing Room, 301 South Second Street, Lafayette, IN 47905-1092.

- AS-396 Selection, Management, and Nutrition of the Cow Herd
- AS-397 Management of the Beef Calf Crop
- AS-406 Twenty Ways to Wean More Pounds of Beef
- AS-412 Cow-Calf Record Book
- AS-414 Beef Herd Management Calendar—Spring Calving Program
- AL-251 Improving Pastures by Renovation
- E-12 Fly Control on Beef Farms
- E-207 Self-Application Devices for Cattle Insect Control
- ID-138 Troubleshooting the Beef Cow-Calf Operation
- VY-33 Infectious Keratitis (Pinkeye) in Cattle
- VY-47 Cow-Calf Herd Health and Disease Management

The following FACTS computer programs are available to use at county Extension offices:

- FX-36 Feeder Cattle Break-Even
- FX-110 Ration Analyzer for Beef